

GP-304123

## SHIFT THROUGH NEUTRAL CONTROL IN AN ELECTRICALLY VARIABLE TRANSMISSION

### ABSTRACT OF THE DISCLOSURE

A shift control for an electrically variable transmission shifts between modes through a neutral mode wherein the output is decoupled from the transmission. Normally, shifts between modes are accomplished synchronously through a  
5 duration of fixed-ratio operation. Extreme driving conditions may invoke shifts through neutral mode. Ratio violations characterized by one mode being active in a preferred input/output ratio range for another mode are handled by a shift through neutral. Similarly, rapid acceleration and deceleration conditions likely to result in undesirable engine speeds if synchronous shifting  
10 is employed are handled by a shift through neutral.